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ABSTRACT

This paper addresses orientation and mobility (O&M) training for people with multiple severe disabilities including visual impairments. The historical origins of O&M training are reviewed, noting difficulties with applying the traditional curriculum with such groups as very young children, the elderly, and those with multiple disabilities. A philosophical and theoretical perspective on O&M for those with multiple disabilities notes the importance of instruction within natural environments. Several models for serving this population are described, based on such principles as instruction within natural settings, functionality of skills, use of operant training procedures, and collaboration by a transdisciplinary team. Some adaptations of technique and equipment are discussed. (Contains 10 references.) (DB)

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ORIENTATION AND MOBILITY FOR STUDENTS WITH MULTIPLE SEVERE DISABILITIES

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Welsh and Blasch have defined orientation and mobility (O&M) as the task of teaching persons with visual impairments to move independently, safely and purposefully through the environment (Gee, Harrell, & Rosenberg, 1987). Persons with severe multiple disabilities have the same need to move about safely and independently as anyone else. However, traditional orientation and mobility techniques, which were designed to be used by adventitiously blind adults with no other disabilities, do not lend themselves to being applied to persons with additional disabilities. With the advances being made recently in the fields of both orientation and mobility and the education of students with severe disabilities, the time has come for orientation and mobility professionals to make a concerted and well-planned effort to meet the O&M needs of persons with visual and multiple severe disabilities.

An Historical Perspective

The standard techniques for orientation and mobility, and the traditional program for their instruction, were developed in the United States following World War II in response to the needs of newly blinded war veterans. These techniques were intended to be used only by adventitiously blind, able-bodied adults, who had no other disabilities (Bledsoe, 1980). The long cane and the touch technique have served their purpose well for these individuals. However, O&M was not originally intended to be applied to such groups as persons who are congenitally blind, very young, elderly,

or multiply disabled, and often it has not met their needs. Over the years, we have seen supplements to, and adaptations of, the original O&M curriculum to take into account the needs of these groups (Joffee & Rikhye, 1991). As early as the 1970s, we see in the literature examples of programs in which persons with visual impairments and other disabilities were given orientation and mobility training (Boe & Zubrycki, 1976; Morse, 1980; Uslan, Malone & De l'Aune, 1983).

However, these adaptations were not always appropriate to the needs and abilities of the students, as they have often been grounded in a rigid adherence to the principles of the traditional O&M curriculum. According to this curriculum, travel skills for individuals who are visually impaired are acquired in a systematic way, based on a hierarchy of cognitive and physical skills that are taught in a particular order. Advanced skills, such as cane skills, are to be taught only after certain prerequisite skills have been mastered (Hill & Ponder, 1976).

Accordingly, if someone with physical problems, even simply low muscle tone, could not perform the presumed "pre-cane" skill of upper arm protective technique, he would not be given a cane. Many of the skills and concepts that are presumed to be "pre-cane" are beyond the abilities, either physical or cognitive, of many persons with visual impairments, especially young children, the elderly, and those with multiple disabilities. But, we are now seeing children as young as three years of age, who have not yet developed the prerequisite skills, using canes to effectively travel through

their environment.

A Philosophical and Theoretical Perspective

As Bryant and Jansen (1980) state, in referring to orientation and mobility instruction for persons with both visual and mental disabilities, "Every individual can profit from instruction that is realistically designed, creatively implemented and periodically evaluated for its effectiveness." Persons with severe multiple disabilities have the same need to move about safely and independently as anyone else. Even if they are unable to be totally independent, they can benefit from being able to travel as independently as possible. They also experience the same lack of security, safety, and information that students who are visually impaired with no other disabilities experience (Joffee, et al., 1991). In fact, their feelings of insecurity may often be magnified by their other disabilities. For example, a student who is blind and severely developmently disabled may not possess the receptive language skills to understand the instructor's description of the route that he is to travel, and may, therefore, be more unsure of what lies in front of him, and feel more insecure, than would a person who is only visually impaired.

Major changes have been taking place in the field of the education of students with severe disabilities. While the emphasis has long been placed on functional skills, of which mobility is one, instruction of these skills has shifted from simulated environments within the school to natural environments in the

community. The main goal is to increase the student's ability to participate as much as possible in community, work, and recreational activities (Gee, Harrell, & Rosenberg, 1987). Where total independence is not possible for the student, the goal for the student may be partial participation. The student will be taught to perform certain component skills of a task, while being assisted with all other parts of the activity.

In order to participate as fully as possible in activities in the community, the child who is severely disabled and visually impaired must have orientation and mobility skills. These skills should be functional, and should be taught in natural environments where their performance is necessary and meaningful to the student. The student should also be naturally motivated to perform the activity that involves the skills (Gee, et al., 1987).

Orientation and Mobility Programs

Teachers of orientation and mobility are, more and more, working with students who have severe multiple disabilities. This is partly because of a change in philosophy within the O&M profession, and partly because of an increase in the severely disabled population, due to improvements in medical science that have saved the lives of many infants with severe disabilities, who, in the past, would have died at, or shortly after, birth.

Most programs documented during the 1970s and early 1980s focused on the development of prerequisite conceptual and motor skills, which were beyond the capabilities of individuals with

severe disabilities (Gee, et al., 1987). At the same time, some O&M professionals were developing innovative programs that were more appropriate to their needs and abilities. However, these programs have not been widely reported, and were often rather informal in their organization. In recent years, we have begun to see in the literature, examples of more formalized programs for teaching orientation and mobility to students with severe visual and cognitive disabilities. (Gee, et al. (1987), proposed a model for the teaching of O&M to learners with severe multiple disabilities, within natural opportunities for travel. Joffee and Rikhye (1991) designed and implemented a program based on the Gee model.

This model represents a combining of the field of orientation and mobility with the field of the education of persons with severe disabilities, which stresses the importance of functional, community based programming. The students for whom the model is intended often do not have the cognitive or physical ability to master the concepts, orientation skills, and mobility skills that have long been assumed to be prerequisites to independent mobility. However, the authors report a recent study in which students with severe disabilities, including blindness, were taught specific O&M skills within the context of functional travel routes, despite their failure to pass the prerequisite skills on the Peabody Mobility Scale (Gee, et al., 1987). These skills were, in many cases, generalized to other unfamiliar environments. Also, the students appeared to have incidentally learned landmarks, clues,

and memory tasks specific to the routes. Thus, rather than requiring certain concepts and skills prior to being taught O&M, the students appear to have acquired some of these concepts and skills through learning to become more independently mobile.

The Gee model (Gee, et al., 1987) has four main components. First, instruction of O&M skills takes place within activities and environments that naturally require performance of the skills. It is community-based rather than based in a classroom where community situations are simulated. Second, training trials are interspersed within a lesson. The student may be required to use skills at certain points along the route, while the instructor assists him on all other parts of the route. This reflects the principle of partial participation, which states that, even though the student cannot perform an activity with complete independence, he can learn to do parts of it by himself. Third, the route and skills must be functional. The student must have a reason for travelling the route -- an objective at the end. Finally, operant training procedures are used, with prompts being faded gradually as performance of the skills becomes intrinsically motivated.

Joffee and Rikhye (1991) have taken the principles espoused by Gee, et al. (1987), and devised and implemented a program to teach students, who have severe visual and multiple disabilities, mobility techniques to enable them to travel in specific indoor environments. These students were unable to master the traditional "prerequisite" skills and concepts. Techniques taught included sighted guide, trailing, moving across open spaces, moving around

obstacles, and to one student, modified diagonal and touch cane techniques. The students were able to travel familiar routes and to transfer the skills learned to other environments. Functional communication systems, unique to each student, were developed so the student could be cued, either verbally, physically, or with a concrete object representing a location or activity. The mobility program was integrated into the students' daily activities at school and at home.

The readiness model of orientation and mobility instruction may well be appropriate for many persons who have only visual impairments. However, if professionals adhere to its premise that certain prerequisites must be mastered before O&M training begins, it will only serve to prevent the learning of valuable mobility skills by students with severe disabilities. Persons who are severely disabled have the same need to move about safely, and as independently as possible, as does anyone else. They also have the same desire to explore their environment as does anyone else. These students may very well learn mobility concepts by experiencing them, rather than having to learn them before they are allowed to experience them. And if they do not learn them by experience, perhaps these "prerequisite" skills were not needed at all, in order for the student to travel safely and functionally within his own particular environment.

An important thread running through the literature is the necessity of collaboration by a transdisciplinary team (Gee, et al., 1987; Joffee and Rikhye, 1991; Boe and Zubrycki, 1976). Among

students with multiple severe disabilities, there is a wide variation in the type and degree of visual impairment and other physical and cognitive disabilities. Each student's individual combination of disabilities will affect his orientation and mobility (Gee, et al., 1987). It may be necessary to involve physical and occupational therapists, speech-language pathologists, behavior specialists, administrators, other professionals, and school support personnel, as well the student's family, as members of the transdisciplinary team. The team should work together to ensure the setting of appropriate goals, the consistent use of O&M skills, and the review and updating of the goals of the program at regular intervals (Joffee and Rikhye, 1991).

Adaptations of Technique and Equipment

Students who are visually impaired and who have severe multiple disabilities are likely to be physically and/or cognitively incapable of performing standard two-point touch technique with a long cane. This is not to say, however, that they cannot learn to use a cane to provide them with protection and information about the environment as they move about independently, or semi-independently, with supervision and occasional assistance. As McCloskey Gamble (1980) suggested, in discussing learners with visual impairments and cerebral palsy, "[i]t is more important for a client to have good coverage with the cane than to have perfect technique." What matters is that the student is safe and

comfortable, and able to move about as independently as possible. This should be the ultimate goal of any orientation and mobility program. A student who has severe disabilities may be able to use a modified diagonal cane technique, with the cane tip resting on the ground, to move about in familiar areas, and, with supervision, in unfamiliar areas, even outdoors. Some may even be able to use constant contact technique, which involves sliding the cane from side to side in an arc similar in width to that used in two-point touch technique. This provides better coverage, and more reliable detection of drop-offs, than the modified diagonal technique.

Modification of technique will often require modification of the long cane. A standard tip, if it is always in contact with the ground in the modified diagonal or constant contact technique, will wear down quickly and catch easily in cracks. A marshmallow tip, placed over the standard tip, can help solve these problems and make travel easier and less frustrating. More extensive modifications of the cane may be helpful particularly for children who are very young or severely involved. The hula hoop cane, the wheel cane (Kronick, 1987), and a two-tipped, "Y"-shaped cane (Morse, 1980) have been used successfully to provide children with the information and protection necessary to allow them to move through their environment with a greater degree of independence.

We have only recently begun to see the development of innovative programs for teaching orientation and mobility skills to

individuals who are visually impaired and have severe multiple disabilities. The success of these programs has shown that it is possible, and often preferable, to depart from the traditional readiness model of O&M instruction.

In the future, we are likely to see a continued increase in the population of students with severe disabilities. They are by no means members of a homogenous group -- there is wide variation in the type and degree of their visual and other disabilities. Professionals in orientation and mobility and related fields must continue to develop innovative approaches and programs to meet their O&M needs, to ensure that they may be able to participate, as fully as possible, in society.

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